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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/177,815  | 10/23/1998  | KYOUNG-SU KIM        | 1363.1004/MD        | 3622             |
| 21171   | 7590        | 03/15/2004           | EXAMINER            |                  |
| STAAS & HALSEY LLP<br>SUITE 700<br>1201 NEW YORK AVENUE, N.W.<br>WASHINGTON, DC 20005 |             |                      | BROWN, RUEBEN M     |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2611                | 20               |

DATE MAILED: 03/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/177,815

Applicant(s)

KIM ET AL.

Examiner

Reuben M. Brown

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/22/2003 has been entered.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-10 & 19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Considering amended claim

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1 and claim 19, the claimed feature is not enabled, 'adjusting the extracted synchronous signal to a synchronous signal of *the* digital broadcasting', emphasis added.

**Examiner notes the amendments made to claim 1, filed 12/22/03. However, the amendments do not resolve the problem of the specific feature that is the subject of the rejection.**

Examiner reads amended claim 1 to include a selection of an analog broadcasting channel *or* a digital broadcasting channel, receiving and processing an analog broadcasting signal *or* digital broadcasting signal, dependent upon the corresponding channel being selected. Therefore, since in the instance that an analog broadcasting signal is being received, then 'the' digital broadcasting signal is not being received, the system would not be enabled to synchronize the analog broadcasting signal to 'the' digital broadcasting signal.

In other words, if digital broadcasting channel is selected, then only a digital broadcasting signal is received and processed. However, if the analog broadcasting channel is selected, then only an analog broadcasting signal is received and processed. Therefore, if the analog broadcasting channel is selected, causing an analog broadcasting signal to be received, there is no digital broadcasting signal being received and thus there is no digital broadcasting signal to with the analog broadcasting signal can be adjusted.

Claims 2-4 depend from claim 1 and are likewise treated.

Considering claim 5, the instant claim includes the limitation of, "a video encoder unit to encode the MPEG processed video signal and the additional information into an encoded analog video signal according to a second control signal of the plurality of control signals and 'the' synchronous signal. Similar to claim 1, the instant claim is read to either select/receive an analog broadcast signal or a digital broadcast signal, but not both at the same time. Therefore, since in the instance that a digital broadcast signal is being received and processed, there would be no analog broadcast signal received and processed, thus 'the' synchronous signal, which is derived from the analog broadcast signal, would not be present and is therefore not enabled.

Claims 6-10 depend from claim 5 and are likewise treated.

#### *Response to Arguments*

4. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-5 & 7-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bestler, (U.S. Pat # 5,638,112), in view of Furumiya, (U.S. Pat # 5,298,998).

Considering amended claim 1, the instant claim is analyzed as best understood, in light of the above 112 rejection. Bestler teaches a hybrid digital broadcast receiver that selectively tunes and receives either an analog or digital TV channel, see col. 2, lines 3-11.

Particularly, Bestler teaches receiving an analog or digital signal according to which channel is tuned. It is taught that if a digital broadcasting channel is selected, then a digital broadcasting signal is received, and the digital demodulator 34 processes the received digital broadcasting signal, col. 2, lines 19-26, (Fig). The recited feature of separating the digital broadcasting signal into an MPEG processed video signal and MPEG processed audio signal is met by the operation of the MPEG decoder 40, col. 2, lines 36-45.

The additionally claimed feature of encoding the MPEG processed video signal separated from the broadcasting signal reads on the operation CV encoder 80. Furthermore, Bestler teaches that the mixer combines processed MPEG data with an overlay, and additional information.

As for the further recited feature of, "if an analog channel is selected, then receiving the analog broadcasting signal is processed by the tuner 14, col. 2, lines 3-8. Regarding the claimed step of extracting a synchronous signal from the received analog broadcasting signal and adjusting the extracted synchronous signal to a digital signal, Bestler teaches that a composite analog signal (which by definition includes synchronous signals) is output by the analog demodulator 28. Next, the YUV components are digitized and fed into the normalizer 70, by the A/D converter 74.

However, Bestler does not explicitly teach extracting the synchronous signals from the composite analog signal. Nevertheless, Furumiya teaches a method of synchronizing the phase of an analog video signal to the phase of a digital video signal. Furumiya disclose extracting the synchronous signal from an incoming vide signal, such as its 3.58 MHz color burst and compensating for time-base error so that the video signal is properly displayed to the viewer, see col. 1, lines 12-15 & col. 3, lines 1-16. Specifically, the reference discloses separating the horizontal sync or burst component from an input analog signal and using this information to adjust the signal to a digital form. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Bestler to extract horizontal sync or color burst

signals from an analog input signal for the well-known improvement of ensuring the colors of the analog signal is rendered in proper phase when displayed on a digital receiver.

Examiner notes that Bestler discloses the prior art of the invention receiving the analog video signal from a playback signal from a disk or tape. Nevertheless, examiner points out that at the time the invention was made, it was well known that time-base errors may also occur in general for analog video signals being displayed on digital receivers. Thus one of ordinary skill in the art would have been motivated to modify Bestler with a teaching of ensuring that the colors are rendered in phase, since the change in the viewable display region on a digital receiver from an analog receiver, causing synchronization problems, was a well-known dilemma at the time the invention was made.

Considering claims 2-3, Bestler teaches that the digital overlay may be converted to analog; see col. 4, lines 12-20. As for the feature of only converting to analog in response to an analog channel selection, the operation of the control signal  $K_a$ , which is input into mixer 82, corresponds with the subject matter, col. 4, lines 20-30.

Considering claim 4, Bestler teaches adjusting the value of control signal  $K_d$ , so that the graphics and text images overlay or not overlay on the video signals, col. 3, lines 35-52.

Considering claim 5, the instant claim is analyzed as best understood, in light of the above 112 rejection. The features of claim 5, that correspond with subject matter mentioned

above in the rejection of claim 1, are likewise treated. Bestler teaches a hybrid digital broadcast receiver that selectively tunes and receives either an analog or digital TV channel, see col. 2, lines 3-11. The claimed controller to determine whether an analog or digital channel is selected and generate a plurality of control signals is met by the operation of the microprocessor 18; col. 2, lines 3-5.

Particularly, Bestler teaches receiving an analog or digital signal according to which channel is tuned. If an analog channel is selected/received, then an analog signal is processed by the analog demodulator 28. However, if a digital channel is selected/received, then the digital signal is processed by the digital demodulator 34.

The additional information process unit to generate additional information according to a first control signal is met by the OSD generator 60; col. 3, lines 32-62. Fig 1 shows a control signal from the microprocessor 18, to the OSD 60. The claimed video encoder for encoding processed MPEG video signal and the additional information into an encoded analog signal is met by the operation of the mixer 64 (which combines the MPEG video and additional data, col. 3, lines 44-47) and the NTSC encoder 80 (which creates an NTSC format analog video signal), col. 4, lines 18-23.

The claimed video mix unit to mix analog video signal from the air tuner and the encoded analog video signal is met by mixer 82, col. 4, lines 25-30. The D/A to convert MPEG audio to MPEG processed analog is met by the D/A 42. The audio selection unit to select and transmit

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MPEG processed analog signal and analog audio signal to a third control signal is met by composite audio encoder 52, col. 3, lines 5-10.

Considering claim 7, see col. 4, lines 29-34.

Considering claims 8 & 14, the CV decoder 72 separates the analog signal into YUV format, which then transmits the analog signal to the A/D converter 74.

Considering claims 9-10 & 16, Bestler teaches that graphics and text may be from the generator, other than received and stored in RAM, col. 4, lines 29-32.

Considering claim 11, the claimed elements of digital broadcasting receiver that correspond with subject matter mentioned above in the rejection of claim 5, are likewise treated.

Considering claim 12, the claimed feature reads on the D/A 42.

Considering claim 13, the claimed feature reads on col. 4, lines 10-20.

Considering claim 15, the claimed feature reads on the OSD generator 60.

Considering claim 17, the claimed feature reads on the decoder 72, col. 3, lines 61-67.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bestler, in view of Pritchard, (U.S. Pat # 4,555,723).

Considering claim 6, Bestler does not teach separating the luminance/chrominance after the mixer 82. However, Pritchard teaches that the very well known technique of luminance/chrominance separation has the advantage of enhancing detail information and reducing distortions, (col. 1, lines 28-31 & col. 2, lines 52-68). It would have been obvious for one of ordinary skill in the art at the time the invention was made, to provide luminance/chrominance separation of the mixed signal at least in order to improve the quality of the video signal, as taught by Pritchard.

8. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bestler & Furumiya as applied to claims 1 & 5 above, and further in view of Choi, (U.S. Pat # 5,633,688).

Considering amended claim 18, the claimed broadcast receiver which receives a digital broadcasting signal and an analog broadcasting signal, comprising a tuning unit to selectively tune the digital or analog signal, is met by the operation of the hybrid analog/digital STB of Bestler, Abstract & col. 1, lines 5-41. The hybrid analog/digital STB of Bestler selectively receives and tunes either or both analog and digital TV signals; see col. 2, lines 3-11 & col. 4, lines 2-6.

As for the claimed processing unit to process the digital or analog broadcasting signals in accordance with the selection by the tuning unit, and to synchronize phases of the digital and analog broadcasting signals upon the tuning unit changing selection between the digital and analog broadcasting signals, Bestler teaches that the composite video signal from an analog TV signals is converted to a digital form and normalized, col. 3, lines 61-65). The normalizer 70 may comprise a scan converter that converts either or both an analog and digital signal to the desired display format. This is done to more accurately display a TV signal according to the desired display format, thereby appropriately increasing the perceived resolution to the desired display format; see col. 4, lines 6-24.

However, Bestler does not explicitly teach synchronizing the phase of the analog video signal. Nevertheless, Furumiya teaches a method synchronizing the phase of an analog video signal to the phase of a digital video signal. Furumiya disclose extracting the synchronous signal from an incoming vide signal, such as its 3.58 MHz color burst and compensating for time-base error so that the video signal is properly displayed to the viewer, see col. 1, lines 12-15 & col. 3, lines 1-16. Specifically, the reference discloses separating the horizontal sync or burst component from an input analog signal and using this information to adjust the signal to a digital form. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Bestler to extract horizontal sync or color burst signals from an analog input signal for the well-known improvement of ensuring the colors of the analog signal is rendered in proper phase when displayed on a digital receiver.

Regarding the additional claimed feature of synchronizing the phase of a digital signal to an analog signal, Bestler does not teach such a technique. Nevertheless, Choi teaches synchronizing a digital image to an analog signal, see Abstract; col. 2, lines 50-56 & col. 8, lines 30-50. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Bestler with the technique of adjusting digital signal to an analog signal, using the phase sync signal, for the desirable purpose of preventing distortion or degradation when displaying a digital signal on an analog receiver, as taught by Choi, col. 1, lines 18-45.

Considering claim 19, the claimed elements of a broadcast receiver corresponds with subject matter mentioned above in the rejection of claim 1, and is likewise treated.

Considering claim 20, the claimed features that correspond with subject matter mentioned above in the rejection of claim 18, are likewise analyzed. As for the additional claimed feature of a video mix unit to selectively input the output of the processed digital broadcasting signal with additional information and the processed analog broadcasting signal with the additional information, the disclosure of Bestler reads on this claimed feature, col. 4, lines 25-30. In particular, Bestler teaches that additional information such as text or graphics may accompany the video signals and are processed & mixed with the composite video signals by the mixer 64; see col. 3, lines 32-61. Bestler also teaches that the linear mixer 82 may be used to provide graphics or text that may be downloaded and stored in RAM analog video.

Regarding the further claimed limitation that the additional information corresponding to a digital broadcasting signal and the additional information corresponding to an analog broadcasting signal are the same, it also disclosed that the these text or graphics from OSD 60 or downloaded MPEG signal, may also be supplied to the digital broadcast signal, see col. 3, lines 32-54, as well as the analog TV signals, col.3, lines 55-60.

### *Conclusion*

9. The prior art made of record and not relied upon is considered pertinent to applicant's claims.

1) Gove Teaches using the 3.58 MHz color burst sync signal to synchronize an analog video signal; see col. 1, lines 10-25 & col. 3, lines 5-67.

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**Any response to this action should be mailed to:**

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*Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington,  
VA., Sixth Floor (Receptionist).*

Any inquiry concerning this communication or earlier communications from the  
examiner should be directed to Reuben M. Brown whose telephone number is (703) 305-2399.  
The examiner can normally be reached on M-F(8:30-6:00), First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's  
supervisor, Andrew I. Faile can be reached on (703) 305-4380. The fax phone numbers for the  
organization where this application or proceeding is assigned is (703) 872-9314 for regular  
communications and After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding  
should be directed to the receptionist whose telephone number is (703) 305-4700.

Reuben M. Brown

  
VIVEK SRIVASTAVA  
PRIMARY EXAMINER